

### **REMARKS/ARGUMENTS**

Reconsideration of this application, in view of the foregoing amendment and the following remarks and arguments, is respectfully requested.

Claims 1-274 are currently pending in this application. By the foregoing amendment, Claims 145, 230-235, 242-248 and 255 have been canceled without prejudice or disclaimer, and Claims 76, 86, 96, 146, 161, 236, 238, 240, 249, 251 and 253 have been revised. Accordingly, Claims 1-144, 146-229, 236-241, 249-254 and 256-274 remain in this application for consideration and allowance.

Claims 1-144, 146-229, 236-241, 249-254 and 256-274 currently stand rejected under 35 USC 102(b) as being anticipated by U.S. Patent 4,981,173 to Perkins et al. This rejection is respectfully traversed for the following reasons.

In a preferred embodiment thereof, the present applicant's invention provides a well tool (representatively a safety valve) having an actuator with an actuator member (illustratively the piston 32), an operating member (illustratively the opening prong 48), and a magnetic coupling (illustratively magnets 54,56) between the actuator member and the operating member. The actuator member displaces in response to a differential between pressure in a line connected to the safety valve, and pressure in an annulus surrounding the safety valve.

Displacement of the actuator member is translated into movement of the operating member, via the magnetic coupling, to operate the safety valve (or other well tool as the case may be). According to a feature of the invention, the translation of the displacement of the actuator member to displacement of the operating member via the magnetic coupling is performed across a pressure isolation barrier (illustratively the tubular barrier 58) without the use of any dynamic seal. In the representatively illustrated safety valve, fluid pressure-created movement

of the piston 32, via the magnetic coupling 54,56 acting across the pressure barrier 58, appropriately translates the opening prong 48 to responsively open or close the safety valve flapper member 42.

In contrast, the Perkins et al safety valve 35 operates in a markedly different manner. Specifically, the Perkins et al operator tube 45 is electromagnetically driven by a solenoid structure to operate the valve flapper 54, with both the flapper 54 and the operator tube 45 being exposed to the same fluid pressure. Tube 45 is not operated in response to a fluid pressure differential, and the tube 45 is not linked to the flapper member such that pressure driven movement of the tube drives the flapper via a magnetic coupling. Instead, electromagnetic power moves the tube which, in turn, moves the flapper.

**Independent Claim 1** and its dependent Claims 2-10 and 256 specify that the recited safety valve actuator member is a piston which displaces in response to a **differential** between **pressure** in a line connected to the safety valve, and **pressure** in an annulus surrounding the safety valve. The Perkins et al operator tube 45 is not driven by a fluid pressure differential as set forth in these claims. Instead, the tube 45 is **electromagnetically** driven. Accordingly, none of applicant's Claims 1-10 and 256 is anticipated by Perkins et al.

**Independent Claim 11** and its dependent Claims 12-20, 150 and 257-265 specify that the recited displacement of the actuator member is translated to displacement of the operating member **across a pressure isolation barrier**. This claimed pressure isolation barrier is clearly not disclosed in Perkins et al. Thus, none of applicant's Claims 11-20, 150 and 257-265 is anticipated by Perkins et al.

**Independent Claim 21** and its dependent Claims 22-36, 119 and 125-127 specify that the recited first and second pressures respectively applied to the actuator piston and operating member are isolated from one another. The Perkins et al safety valve does not have a pressure-actuated

piston, and the tube 45 and flapper member 54 are subjected to the **same** fluid pressure. Accordingly, none of applicant's Claims 21-36, 119 and 125-127 are anticipated by Perkins et al.

**Independent Claim 37** and its dependent Claims 38-51, 120, 123 and 128-130 recite the translation of displacement of the actuator member to displacement of the operating member by the use of a **magnetic coupling therebetween**. In the Perkins et al safety valve the solenoid structure does not translate movement of the tube 45 into movement of the flapper 54. Instead, the solenoid structure selectively **causes** movement of the tube 45 which is **mechanically** linked to the flapper 54. Thus, none of applicant's Claims 37-51, 120, 123 and 128-130 is anticipated by Perkins et al.

**Independent Claim 52** and its dependent Claims 53-75, 121, 124, 131 and 132 recite a first magnetic device at a first pressure, the actuator displacing the first magnetic device, a second magnetic device at a second pressure, with the well tool being operated in response to displacement of the operating member, and a **pressure barrier** isolating the first and second pressures, with displacement of the first magnetic device on a first side of the barrier causing displacement of the second magnetic device on a second side of the barrier. Perkins et al fails to disclose this claimed pressure barrier with first and second magnetic devices at first and second pressures being disposed on opposite sides thereof. For this reason, none of applicant's Claims 52-75, 121, 124, 131 and 132 is anticipated by Perkins et al.

**Independent Claim 76** and its dependent Claims 77-85 and 147-149 recite that the actuator member is a **piston** which displaces in response to a **pressure differential**. The Perkins et al safety valve clearly lacks this claimed piston which displaces in response to a pressure differential. The Perkins et al tube 45 displaces in response to an electromagnetic force

imposed thereon. Accordingly, none of applicant's claims 76-85 and 147-149 is anticipated by Perkins et al.

**Independent Claim 86** and its dependent Claims 87-95 specify that the actuator includes a **motor** which displaces the actuator member. Perkins et al fails to disclose a motor which displaces the tube 45. Therefore, none of applicant's Claims 86-95 is anticipated by Perkins et al.

**Independent Claim 96** and its dependent Claims 97-105, 151 and 266-274 recite that the translation of the displacement of the actuator member to displacement of the operating member is performed **across a pressure isolation barrier**. As discussed above, Perkins et al fails to disclose this claimed pressure isolation barrier. Therefore, none of applicant's Claims 96-105, 151 and 266-274 is anticipated by Perkins et al.

**Independent Claim 106** and its dependent Claims 107-118, 122 and 133-144 recite an actuator for displacing an actuator member of a well tool, an operating member which is displaced to operate the well tool, and **a magnetic coupling between the actuator member and the operating member**. Perkins et al fails to disclose this claimed magnetic coupling between the tube 45 and the flapper 54. The solenoid structure in Perkins et al is drivingly coupled to the tube 45 and is not positioned **between** the tube 45 and the flapper 54. Thus, none of applicant's Claims 106-118, 122 and 133-144 is anticipated by Perkins et al.

**Independent Claim 146** recites a magnetic coupling **between** the actuator member and the operating member, and that the magnetic coupling **translates** displacement of the actuator member into operating member displacement to thereby operate the safety valve. As discussed above, Perkins et al fails to disclose a magnetic coupling coupled **between** the tube 45 and flapper 54 which **translates** displacement of the tube 45 into displacement of the flapper 54. Instead, the solenoid portion of the Perkins et al apparatus is coupled directly to and drives the tube 45. Therefore, Claims 146 is clearly not anticipated by Perkins et al.

**Independent Claims 152, 165 and 178** and their dependent Claims 153-164, 166-177 and 179-190 recite that the translation of displacement of the actuator member to displacement of the operating member is performed **across a pressure isolation barrier**. As discussed above, the Perkins et al reference fails to disclose this claimed pressure isolation barrier. Accordingly, none of applicants' Claims 152-164, 165-177 and 178-190 is anticipated by Perkins et al.

**Independent Claims 191 and 204** and their dependent Claims 192-203 and 205-216 recite the translation of displacement of the actuator member into displacement of an operating member using a magnetic coupling between the actuator member and the operating member. As discussed above, the Perkins et al reference fails to disclose this claimed displacement **translation** using a magnetic coupling **between** an actuating member and an operating member. Therefore, none of applicant's Claims 191-203 and 204-216 is anticipated by Perkins et al.

**Independent Claim 217** and its dependent Claims 218-229 recite that displacement of the actuator member is **translatable** into displacement of the operating member using a **magnetic coupling**. In Perkins et al, displacement of the tube 45 is not **translated** into displacement of the flapper 54 by the solenoid structure. Instead, as discussed above, the solenoid structure is used to forcibly move the tube 45 which, in turn, mechanically moves the flapper 54. Thus, none of applicant's Claims 217-229 is anticipated by Perkins et al.

Finally, the well tool disclosed in Perkins et al is not a **packer** as recited in applicant's Claims 236, 237, 249 and 250; is not a **perforating assembly** as recited in applicant's Claims 238, 239, 251 and 252; and is not a **choke** as recited in applicant's Claims 240, 241, 253 and 254. Accordingly, none of applicant's claims 236-241 and 249-254 is anticipated by Perkins et al.

In view of the foregoing amendment, remarks and arguments, all of the claims currently pending in this application are now seen to be in a condition for allowance. A Notice of Allowance of Claims 1-144, 146-229, 236-241, 249-254 and 256-274 is therefore earnestly solicited.

The Examiner is hereby requested to telephone the undersigned attorney of record at 972/516-0030 if such would further or expedite the prosecution of the instant application.

Respectfully submitted,

KONNEKER & SMITH, P.C.



J. Richard Konneker  
Attorney for Applicant  
Registration No. 28,867

Dated: MARCH 1, 2004

660 N. Central Expwy., #230  
Plano, Texas 75074  
972/516-0030

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450,

on

March 1, 2004

Meredith Sutton